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The spider genus *Symphytognatha* Hickman (Araneae: Symphytognathidae) newly described from Africa

by

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ABSTRACT

Symphytognatha imbulunga sp. n. is described. It is the first member of this genus, otherwise widespread in the tropics and southern hemisphere, to be recorded from Africa. The relationships of this species to other *Symphytognatha* are discussed.

INTRODUCTION

The family Symphytognathidae Hickman includes tiny, lungless, orb-or sheet-web weaving spiders, among them the smallest known spiders. In the past the family served as a polyphyletic dumping ground for minute Araneoidea (Lehtinen 1975), but has recently been relimited on the basis of synapomorphic characters by Forster & Platnick (1977). In their review the Symphytognathidae was restricted to include only those spiders with the chelicerae fused wholly or in part (Fig. 1), the female pedipalp reduced or absent (Fig. 3), the labium wider than long, and the sternum broadly truncate posteriorly (Fig. 2).

The family is widespread in the tropics and southern hemisphere, but due to the minute size of most forms has been little collected, and is certainly richer and more widespread than the 22 known species would indicate. Indeed, Forster & Platnick (1977) believe our present knowledge of the family to be only 'the tip of the iceberg'. The Symphytognathidae are little known from Africa, with only one species, *Anapistula benoiti* Forster & Platnick 1977 from Kivu, Zaïre, recorded from this continent. Of great interest then is the discovery of a new species of symphytognathid from South Africa attributable to the genus *Symphytognatha* Hickman. It shares with the other members of that genus the diagnostic characters of having the chelicerae fused for most of their length with the suture line between them clearly visible (Fig. 1) and multidentate superior claws on tarsi I (Fig. 4) and II. *Symphytognatha* was previously known from 7 species (Forster & Platnick 1977, Platnick 1979), 1 each from Tasmania, Australia, New Guinea, Brazil, Belize, Mexico and Jamaica: this is the first record of this genus from Africa.

MATERIALS AND METHODS

The specimen was manipulated and examined in a temporary slide mount as described by Coddington (1983). For examination of the genitalia and spinnerets the whole abdomen was cleared in warm, 10% KOH. Drawings were made with camerae lucidae on Wild stereo and Zeiss compound microscopes. All measurements are in millimetres; abbreviations referring to the ocular region and tarsal claws are standard for the Araneae.

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TAXONOMY

Symphytognatha imbulunga sp. n.

Figs 1–6

Etymology: The specific name is from the Zulu *imbulunga*, meaning a sphere, referring to the globose abdomen.

Diagnosis: Distinguished from all other members of the genus by the form of the female genitalia (Fig. 6) in which the copulatory duct is short and enters the spermatheca directly, without first circling around the spermathecal chamber.

Female: Total length, including chelicerae 1,89. Carapace yellow-white, with dark pigment around bases of eyes; chelicerae and sternum pale yellow-brown, labium and pedipalpal coxa yellow-white. Legs with coxae, trochanters, and femora yellow-white, patellae to tarsi pale yellow-brown. Abdomen pale grey-white, venter with two large, dark spots anterior to spinnerets.

Carapace (Fig. 3) 0,645 long, 0,56 wide, 0,50 high; 3 bristles posterior to PER, 1 each mesad of PLE and ALE; clypeus nearly vertical, height less than ½ ALE length, 5 bristles along clypeal margin. Six eyes, ratio AL:PM:PL, 1,0:1,14:1,0, PM diameter 0,08; PME–PME 0,016, PME–PLE 0,07, PLE–ALE 0,016; ocular area 0,13 long, 0,45 wide, AER and PER subequal. Chelicerae (Fig. 1) 0,435 long, nearly vertical, with 4 pairs of long, 3 pairs of short, and 2 pairs of subapical setae; distal lobe of fang furrow with 2 long, slender teeth. Sternum (Fig. 2) 0,435 long, 0,37 wide, sparsely setose laterally; labium 0,04 long, 0,18 wide; pedipalpal coxa 0,145 long, 0,08 wide.

Legs sparsely setose, each patella with dorsal subapical erect bristle, each tibia with dorsal subbasal erect bristle. Leg formula 1423; measurements:

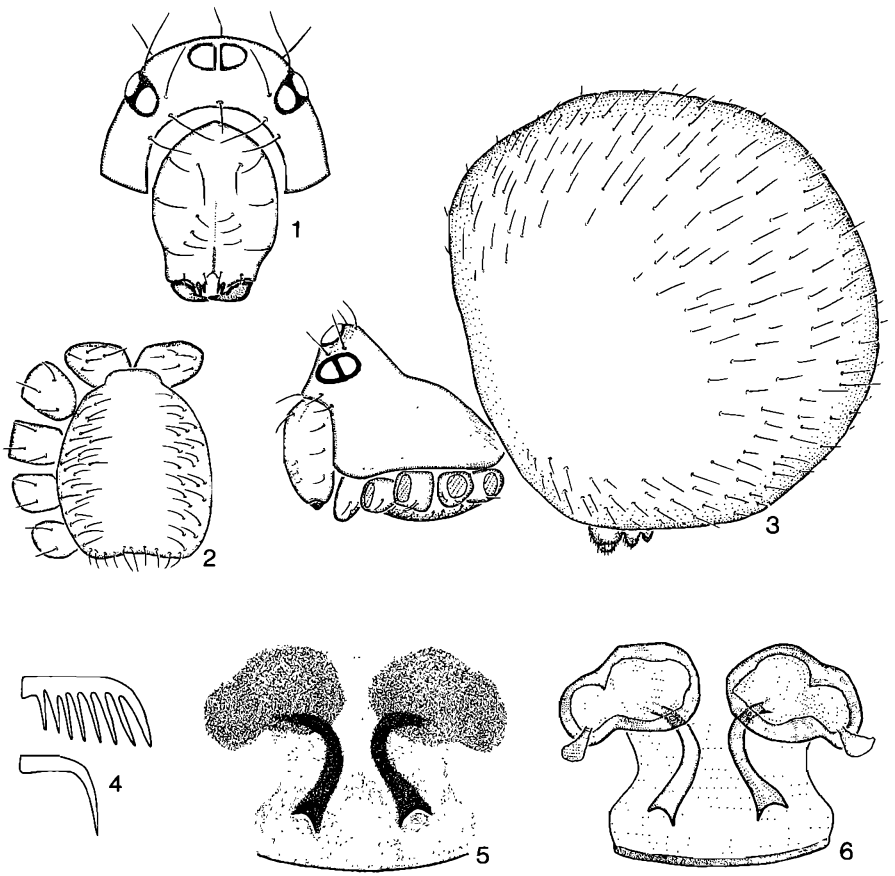
	I	II	III	IV
Femur	0,45	0,37	0,34	0,40
Patella	0,225	0,20	0,19	0,20
Tibia	0,24	0,25	0,20	0,26
Metatarsus	0,19	0,19	0,17	0,19
Tarsus	0,34	0,32	0,32	0,35
Total	1,445	1,33	1,22	1,40

Pedipalp absent except for coxa. STC I (Fig. 4) and II with 8–9 slender teeth, STC III and IV smooth except for a few weak basal teeth; ITC I–IV long, slender, curved (Fig. 4).

Abdomen globose (Fig. 3), sparsely covered with simple setae except on lower sides and venter, 1,34 long, 1,40 high, 1,34 wide. Epigynum (Fig. 5) with a pair of external pores; spermatheca (Fig. 6) oval, connected posteriorly to a short, curved copulatory duct.

Male: Unknown.

Distribution: Known only from the type locality.



Figs 1–6. *Symphytognatha imbulunga* sp. n., holotype female. 1. Carapace and chelicerae, anterior. 2. Sternum, labium, and coxae, ventral. 3. Cephalothorax and abdomen, lateral. 4. Leg I claws, anterior STC, ITC. 5. Epigynum, ventral. 6. Spermathecae, dorsal.

Material examined: Holotype ♀ from the litter layer of the indigenous Ngotsche Forest at 1 800 ft. el. on Cascades Farm, 10 km W Eshowe, Zululand, Natal, South Africa, collected 17.i.1984 by C. E. Griswold, deposited in the Natal Museum (NM type No. 3343).

DISCUSSION

Considering the intercontinental distribution of these minute, cryptic spiders, it is possible that the genus *Symphytognatha* is an ancient one. In this context it might be useful to examine the possible interrelationships of the *Symphytognatha* faunas of Australasia, South and Central America, and Africa. The Australasian species (*S. globosa* Hickman, 1931; *S. blesti* Forster & Platnick, 1977; *S. ulur* Platnick, 1979) have in common a copulatory duct which encircles the spermatheca 3–6 times, whereas in the American species the copulatory duct makes only a single (*S. brasiliana* Balogh & Loksa, 1968; *S. goodnightorum* Forster & Platnick 1977) or partial (*S. gertschi* Forster & Platnick, 1977) turn around the spermatheca (Forster & Platnick 1977, Platnick 1979). *S. imbulunga* sp. n. differs from all of these in that the copulatory duct enters the spermatheca directly without even partially encircling it (Fig. 6). While the Australasian and American forms are therefore more similar in the form of the female genitalia, it is uncertain if this represents a synapomorphy uniting these species. The genus *Globignatha* Balogh & Loksa, 1968, the probable sister-group of *Symphytognatha* (according to Forster & Platnick 1977), includes a species with a short, direct copulatory duct (*G. sedgwicki* Forster & Platnick, 1977) and one in which the copulatory duct encircles the spermatheca once (*G. rohri* Balogh & Loksa, 1968). It is equally parsimonious to consider the simple copulatory duct as plesiomorphic and the coiled duct to be independently derived in *G. rohri* and in the common ancestor of the American and Australasian *Symphytognatha*, or to consider the coiled duct as plesiomorphic for *Symphytognatha* plus *Globignatha* and the simple duct as independent reversals in *S. imbulunga* sp. n. and *G. sedgwicki*. As a coiled duct does not occur in any other genera of the Symphytognathidae, the latter may be more likely, but a sound understanding of the relationships among these minute spiders must await collection and study of what is probably a rich fauna.

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